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MONSANTO CHEMICAL COMPANY

PHOSPHATE DIVISION, SALES DEPARTMENT

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Place
under
Aroclor
more uses
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+ give
PAY-70*
July 14, 1953

TO: ALL PHOSPHATE DIVISION SALESMEN

SUBJECT: AROCLORS, HB-40, PHENYLCYCLOHEXANE, AND BICYCLOHEXYL
--AIDS IN DISTILLATION PROBLEMS

All of these materials are high boiling solvents possessing good heat stability. The Aroclors are noted especially for their chemical inertness, and in many reactions the other high boiling materials listed may also be inert solvents. Consequently, these materials find use as inert reaction media in chemical processes and distillations. To give a typical example indicating Aroclor use in a reaction such as a gas-liquid in solvent type:

The proper liquid Aroclor--1242, 1248, 1254, or 1260--is chosen to give an adequate difference in boiling points to obtain good separation of the lower boiling end product of the reaction from the Aroclor. Products which have boiling points between 150°-250°C. at atmospheric pressure have been made and separated from Aroclors.

A product distilling at about 78°C. at 40 mm. Hg, was separated from Aroclor 1242 boiling at 210°C. under the same pressure without fractionation. Another product boiling at 100°C. at 2 mm. Hg. required moderate fractionation to separate it from Aroclor 1242 boiling at 135°C. at 2 mm.

Used as a stable solvent the Aroclor can be reused several times before discarding or distilling it to restore its original refined state.

The Aroclor acts as a stable heel in the still and allows all of the desired end product to be recovered. Improved reaction yields and higher distillation recoveries have been some of the benefits derived from the use of Aroclors as inert solvents.

In cases where the residue from a distillation has a tendency to polymerize or decompose to form a solid, Aroclor use can serve as a solvent-plasticizer in many cases. The purpose of the Aroclor is to keep the residue as a free-flowing fluid for easy removal. Thus, by allowing better heat transfer in the fluid, excessive decomposition and loss of product can be minimized.

Also, the resinous Aroclors such as Aroclor 5460 have been successfully tried for this purpose, but this resinous Aroclor cannot be recovered and it is discarded with the still residue. Aroclor 5460 plasticizes various residues satisfactorily when used in amounts of 25%-30%, based on the total weight of the residue.

P. G. Benignus

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